(1) In view of the light-ring L_k, and of the peculiar boiling annulus around V_n, which may be called L_n, I have no doubt that L_n was, in fact, a continuation of the light-ring L_k, *which latter, beyond all question, was plainly visible*; and under these circumstances it may be urged that Venus is surrounded by an atmosphere which at the time was made *visible* to the extent of 2″ to under 4″ in breadth.

(2) As a matter of fact, the pear-drop and the ligament were visible at a height of 2200 feet, but at 6500 feet the ligament was invisible. The influence generally of height of station, from this evidence, appears undeniable; but the phenomenon still remains to be accounted for definitely. If, however, an effective atmosphere of x breadth around Venus be conceded, this atmosphere may be supposed to stop a certain amount of direct light from the sun, producing a slight shade around Venus corresponding to the breadth x. This shade would, I conceive, be quite invisible when its outer edge is backed by the sun's bright light; but could we contract the sun to a diameter equal to that of Venus *plus* twice x, and make Venus and the sun concentric, it appears likely that we should see a shaded annulus right round Venus between her limb and that of the sun; further, that the annulus would appear darker at low than at higher altitudes, and would become invisible when the observer was raised above a sufficiency of the earth's atmosphere. Should these suggestions prove tenable, the ligament seen would break when the outer edge of the shade, corresponding to x, transited across the sun's limb.

(3) Solar light shining through Venus's atmosphere, if any, produces no alteration in the lines of the solar spectrum, so far as the dispersion of a single simple prism can show. Also Venus's face, turned towards us, reflects no light during transit, subject to the same instrumental test.

Night of 10th Dec., 1874.

III. "Appendix to Note, dated November 1873, on White Lines in the Solar Spectrum." By J. B. N. Hennessey, F.R.A.S. Communicated by Professor Stokes, Sec.R.S. Received January 11, 1875.

After detection of the white lines 1650 and 1658 (Kirchhoff's scale) at Mussoorie in November 1873, I discovered two other such lines before leaving that station of observation, viz. 2009 and 2068 (about). On 20th November, 1873, I packed up the spectroscope, taking particular care that the prisms should not shift from the position they then occupied.

On 28th November, 1873, I set up the spectroscope in the Dome Observatory at Dehra, in the valley below, the prisms retaining their former position, and my recollection of the white lines seen at Mussoorie

being still quite vivid. I now found that 1650 and 1658 were distinctly seen; but they were no longer nearly of the pure white colour they presented at the higher station, while what may be termed the gloss about their whiteness, which induced me to describe them as resembling "threads of white silk held in the light," had quite disappeared; indeed they were now so decidedly greenish as not to invite attention. White line 2068 I now could hardly see, and 2009 was invisible, notwithstanding that I was quite familiar with the positions they occupied, and had made careful notes on the subject.

After this I released the prisms and turned them about variously, without producing any alteration in the white lines as they were now seen.

The height of the spectroscope above sea-level was

at Mussoorie..... 7100 feet.
„ Dehra ..... 2200 „

February 18, 1875.

JOSEPH DALTON HOOKER, C.B., President, in the Chair.

The Presents received were laid on the table, and thanks ordered for them.

Pursuant to notice, the Right Hon. Sir Stafford H. Northcote, Bart., C.B., Chancellor of the Exchequer, was balloted for and elected a Fellow of the Society.

The following Papers were read:—

I. "On the Number of Figures in the Reciprocal of each Prime Number between 30,000 and 40,000." By WILLIAM SHANKS. Communicated by the Rev. Dr. SALMON, F.R.S. Received January 5, 1875.

The further extension of my previous Table III. has enabled me to add "26" (see "Determination of a Prime Number," Proc. Roy. Soc. June 18, 1874) to the list of complete resolutions; for the factor 10583 13049 is smaller than 40000^2, and is therefore a prime number. "99" in the same Table may now have the large factor somewhat reduced, and stand as follows, since $34849 \equiv 99$:—

99 | 199 . 397 . 34849 . 36321 69409 21057 80278 45603 26475 97861 29249 67984 25182 29368 83.